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“Step Out From the Old to the New”

IS 11251 (1985): Bow Saw Blades [PGD 6: Earth, Metal And Wood Working Hand Tools]



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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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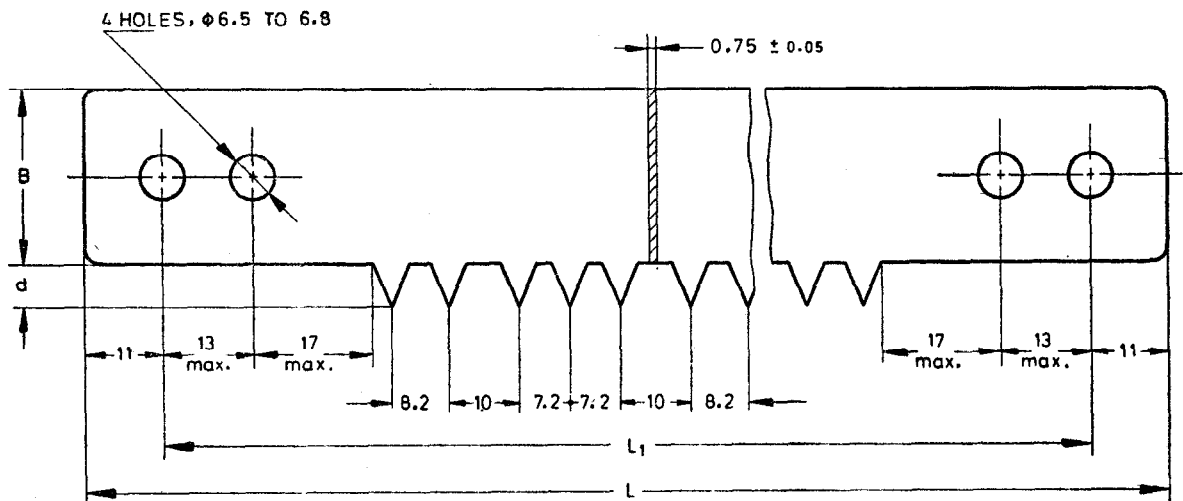


Indian Standard

SPECIFICATION FOR BOW SAW BLADES

1. **Scope** — Covers the requirements of bow saw blades, suitable for frames conforming to IS : 11250-1985 'Specification for bow saw frames'.

2. **Dimensions**



All dimensions in millimetres.

Nominal Size	Overall Length $L \begin{smallmatrix} +2 \\ -3 \end{smallmatrix}$	Width $B \pm 1$	d ± 0.05	L_1 ± 2
760	760	25	6.25	738
915	915	25	6.25	893

2.1 A peg toothed pattern with irregular pitch to avoid vibrations during work with the saw, shall be adopted. Different pitch (mm) in series shall be:

10, 7.2, 7.2, 10, 8.2, 8.2, 10, 7.2, 7.2, 10, 8.2, 8.2, 10 mm and so on.

2.1.1 The tolerance on the pitch shall be +0.2 mm.

3. **Material** — Blades shall be made of suitable steel strips in hardened and tempered condition, meeting the requirements laid down in 4 and 8.

Suitable composition of the material is:

Carbon	—0.75 to 0.9 percent
Silicon	—0.35 percent, <i>Max</i>
Manganese	—0.65 to 0.9 percent
Sulphur and phosphorus	—0.05 percent, <i>Max</i> each

4. **Hardness** — 45 ± 3 HRC.

IS : 11251 - 1985

5. Designation — Bow saw blade shall be designated by nominal size and number of this Indian Standard.

Example:

Bow saw blade of nominal size 915 shall be designated as:

Blade 915 IS : 11251

6. Manufacture, Workmanship and Finish

6.1 The teeth shall be straight before the setting is done. The blade teeth shall have setting of 0.30 mm. The setting shall be identical on each side of the blade. Variation in each side setting shall be ± 0.05 mm and the tooth points shall form line when seen from the end.

6.1.1 All blade teeth shall be sharpened for two way cutting to a depth which enables the blade to pass the tests laid down in 7. The tooth point angle shall be 45° to 50° after sharpening and have half bevel angle between 50° to 70° .

6.2 The blades shall be smooth, free from rust and burrs.

6.3 Blades shall be lightly oiled or lacquered to prevent corrosion in transit or storage.

7. Cutting Tests — The manufacturer shall carry out machine and manual type tests and records of the same shall be kept. Wood test pieces used for testing shall be as given in 7.1. Machine requirements shall be as given in 7.2. Machine type test and manual type test shall be carried out as given in 7.3 and 7.4.

7.1 Wood Test Pieces — Pine wood shall be used for the testing. It shall not be green. Two test pieces shall be used. One of dry wood, and the other of wet wood with a moisture content greater than 20 percent. The test pieces shall be either 12 centimetres round cross-section or 10×10 centimetres square cross-section.

7.2 Machine for Test — The cutting test shall be carried out on a suitable hacksaw machine. It shall be in good condition, particularly in respect of stroke alignment and free from excessive vibrations. The machine shall have gravity feed and shall cut on forward and reverse strokes. The machine shall have a minimum stroke length 400 mm and a speed of 50 ± 2 strokes/minute. The machine shall also present the blade at an inclination between 1.5° and 3° to the machine slides. The total mass of the reciprocating arm when the machine is at mid stroke, shall be not greater than 5.5 kg.

7.3 Machine Type Test — The wood test piece as specified at 7.1 shall be located such that, when the machine is at mid stroke, the wood is positioned in the central portion of the blade. The position of test piece shall not be changed. The requirements for number of sections to be cut from wet and dry test pieces; and the maximum time to be taken for the final section shall be as given in Table 1.

7.4 Manual Type Test — After completing the machine test, the blade shall be removed and fitted to the frame conforming to IS : 11250-1985. Manually, it shall be able to cut one section of wood from the wet and dry test pieces in the time given in Table 1. During the test the saw blade shall not stick in the cut. The saw cut shall be straight and the section smooth.

7.5 The test given in 7.3 and 7.4 shall be repeated after the saw blade has been resharpened manually.

7.5.1 In case of tooth hardened blade number of sections to be cut shall be:

For 8 times — {	For dry wood	1 000
	Soft wood	800

The maximum time for the last cut shall be the same as in Table 1.

7.5.2 No repeat test is required in case of tooth hardened blade.

8. Packing — Each blade shall be packed separately as per the best trade practices.

TABLE 1 CUTTING TESTS FOR BOW SAW BLADES

(Clauses 7.3 and 7.4)

Wood Test Piece	Number of Sections to be Cut	Maximum Cutting Time per Final Section (For Machine and Manual Tests)
Dry test wood	100	1.75 Minutes
Wet test wood	80	2 Minutes

9. Marking — Blades shall be marked with manufacturer's name, initials/or registered trade-mark, nominal size, and year of manufacture.

9.1 ISI Certification Marking — Details available with the Indian Standards Institution.

10. Sampling — Unless otherwise agreed to between the manufacturer and the purchaser, the sampling plans and criteria for conformity shall be according to IS : 2500 (Part 1)-1973 'Sampling inspection tables : Part 1 Inspection by attributes and by count of defects (*first revision*)'.

10.1 For dimensions, workmanship and finish and hardness a sampling plan with inspection level I and AQL of 6.5 percent as given in Table 1 and 2 of IS : 2500 (Part 1)-1973 shall be followed.

10.2 For cutting test, the number of blades to be selected shall be 1 per 1 000 blades or part thereof in the lot. If it fails, two more blades shall be selected from the same lot and subjected to test. None of the blades shall fail.

EXPLANATORY NOTE

Bow saw blades, when fitted in bow saw frames, are used for cutting of wet and dry wood, felling trees of smaller stem dimensions and their branches. These are generally used in the forests.

While preparing this specification, considerable assistance has been taken from the details supplied by Logging Development Institute, Dehra Dun, and NCB 393 : 1982 'Specification for bow saws and blades' issued by National Coal Board (UK).